**Measurement Quiz**   **Name** _____

1.   The distance around a rectangular room is 40 feet, and 96 tiles (each one is 1 square foot in size) are needed to cover the floor in the room. What are the room's dimensions?

2.   In the following sequence, the figures are made of cubes that are glued together. If only the exposed surfaces need to be painted (i.e., after gluing), how many squares will be painted in the 10th figure?
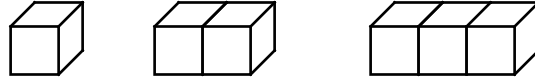

Convert the measurements.

3.   60 ft = _____ yd   4.   42,240 feet = _____ mi

5.   329 in. = _____ yd   6.   0.75 mi = _____ ft

7.   Convert your height and weight to metric measurements.

        (a) _____ ft _____ in. = _____ in. = _____ cm = _____ m

        (b) _____ lb = _____ kg

8.   The circumference of a circle is 350 cm. What is its radius?
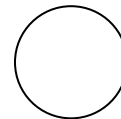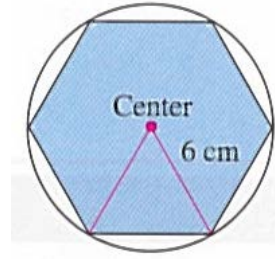

9.   Sarah reports that the radius of a circle is 6 cm, and its circumference is 36π cm. Explain whether or not she is correct.

10.   Determine the area of the shaded region on each of the following geoboards if the unit of measure is 1 cm^2.

        (a)   (b)
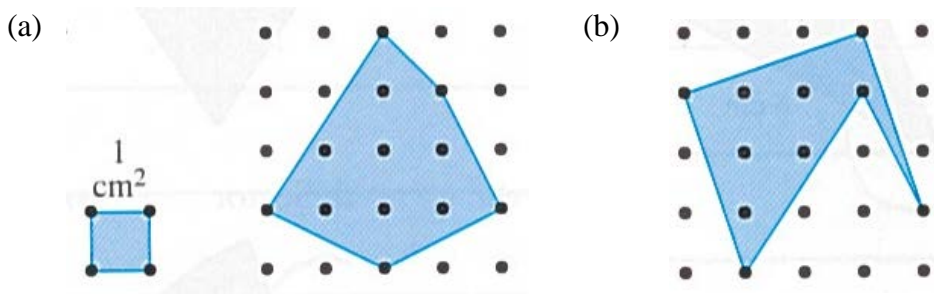
11. Use the figure shown to find each of the following areas.
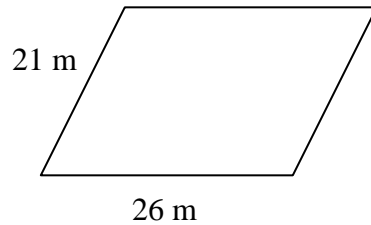
    (a) The area of the regular hexagon

    (b) The area of the circle

Find the perimeter of the parallelogram.

12.

21 m

26 m

Solve.

13. Mel plans to fence his yard for his new puppy. The yard is a 30 ft by 54 ft rectangle. Fencing costs $15 per 10 ft section. What is the cost of the fence?

14. Find the side length of a square with the same perimeter as a circle with radius 5 in. Use 3.14 for π. Multiple choice.

    (a) 7.85 in.   (b) 15.7 in.   (c) 3.93 in.   (d) 5.6 in.

Choose the most reasonable unit of measure.

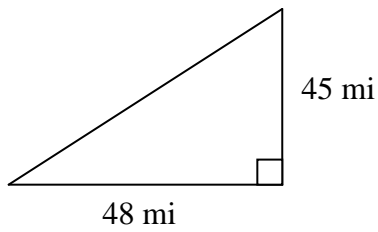15. Basketball court length: 27 _____   (mm, cm, m, km)

16. Pencil width: 0.4 _____   (in., ft, yd, mi)

17. Area of door: 18 _____ $\left(in^2, \ ft^2, \ yd^2, \ mi^2 \right)$

18. Area of a lake: 4 _____ $\left(mm^2, \ cm^2, \ m^2, \ km^2 \right)$

Find the area.

19.

45 mi

48 mi
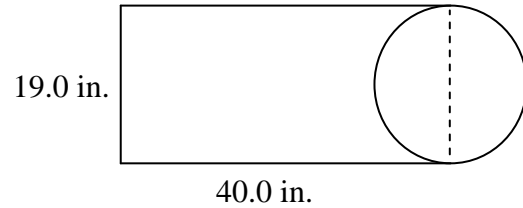
Find the area.

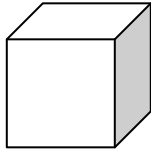14 ft
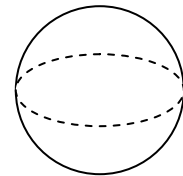
20.

55 ft

23 ft

34 ft

21.

19.0 in.

40.0 in.
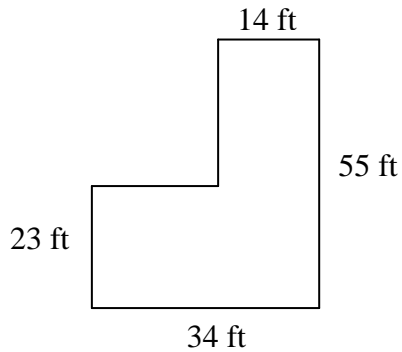
Find the surface area of the given figure.

22.   Cube, each side is 24 cm

23.   A sphere with r = 3.7 yd. Multiple choice.

(a) 57.3 yd^2
(b) 43.0 yd^2
(c) 171.9 yd^2
(d) 212.1 yd^2

Solve.

24.   Three people build a rectangular (prism-shaped) shed 7 ft wide, 5 ft long, and 6 ft high. About how many cubic feet does the shed contain?

(a) 18   (b) 107   (c) 210   (d) 1,470

25.   Find the volume of a sphere with radius 11 in. Use 3.14 for π. Round to the nearest tenth.

(a) 5,572.5 in^3 (b) 1,520.0 in^3 (c) 380.0 in^3 (d) 506.6 in^3

26.   Convert 900°C to Fahrenheit. Use the formula $F = \dfrac{9}{5}C + 32$.

(a) 1,626.4°F   (b) 527.0°F   (c) 1,652°F   (d) 1,677.6°F

27. A 5-kilometer roadway under construction is being completed at a pace of one-tenth of its length per week. After 5 weeks, how many meters need to be completed?

   (a) 2.5 m   (b) 2,500 m   (c) 25 m   (d) 250 m

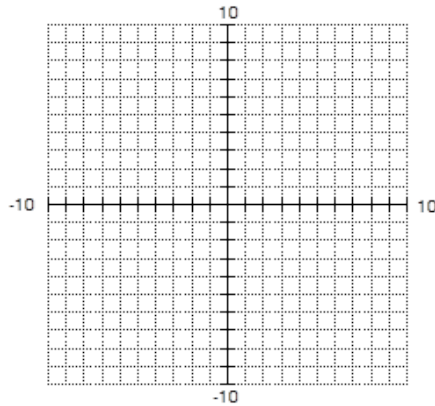28. Find the distance between the two points (7, 4) and (-4, -4). Multiple choice.

   (a) $\sqrt{57}$ (b) $\sqrt{185}$ (c) 3   (d) 88   (e) None of these

29. Write the equation of the circle satisfying the given conditions. Multiple choice.
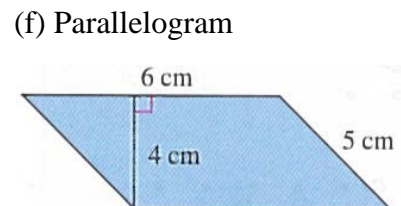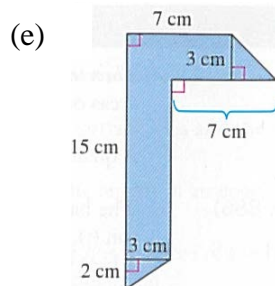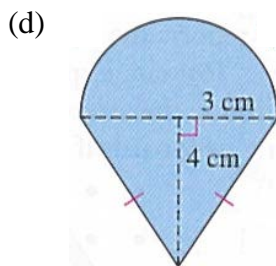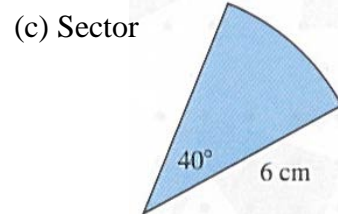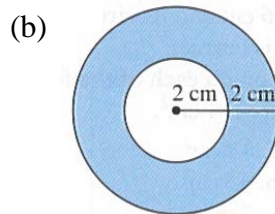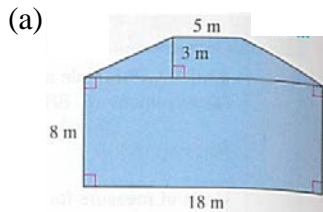
   Center at (-6, 0) with a radius of 4

   (a) $(x + 6)^2 + y^2 = 16$ (b) $x^2 + (y + 6)^2 = 4$ (c) $(x - 6)^2 + y^2 = 16$

   (d) $x^2 + (y - 6)^2 = 4$ (e) None of these

30. Graph this circle with center at (-6, 0) and radius 4 on the coordinate grid.

31. Find the area of each shaded region in the following figures.

(a)

(b)

(c) Sector

(d)

(e)

(f) Parallelogram

32. A baseball diamond is actually a square with 90 ft on a side. What is the distance a catcher must throw the ball from home plate to second base?

33. Find the length of segment AG in the spiral shown (a.k.a. The Wheel of Theodorus).
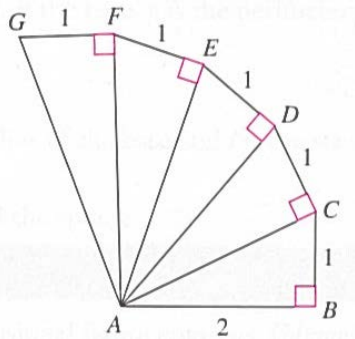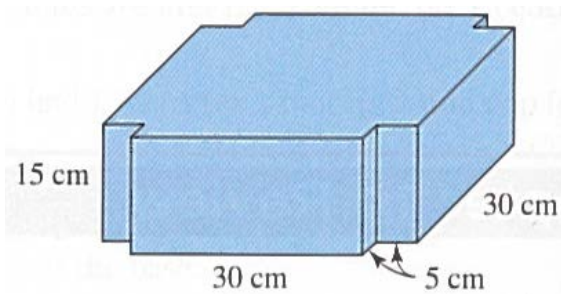

34. Determine whether each group of measures represent sides of a right triangle.
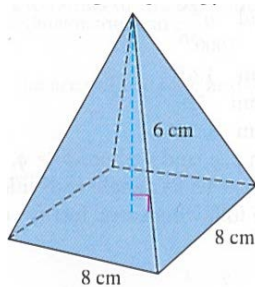
(a) 5 cm, 12 cm, 13 cm

(b) 40 ft, 60 ft, 80 ft

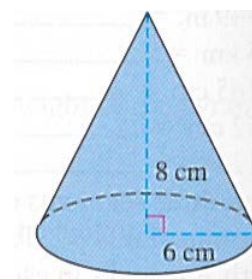35. Find the surface area of the following box. Include the top and bottom.

15 cm

30 cm

30 cm

5 cm

36. Find the surface area and volume of the following figures.

(a) Right square pyramid

6 cm

8 cm

8 cm

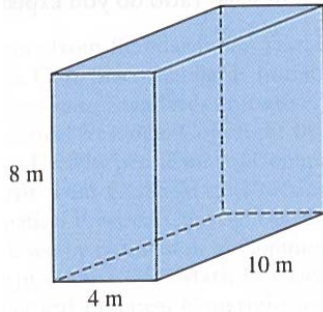(b) Right circular cone

8 cm

6 cm

(c) Sphere
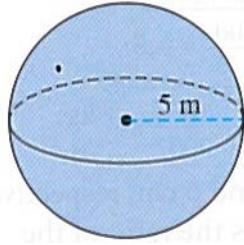
(d) Right circular cylinder
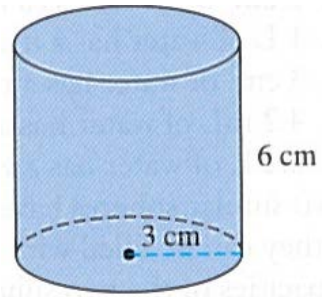
(e) Right rectangular prism

37. Doug's Dog Food Company wants to impress the public with the magnitude of the company's growth. Sales of Doug's Dog Food doubled from 2012 to 2014, so the company is displaying the following graph, which show the radius of the base and the height of the 2014 dog food can to be double those of the 2012 dog food can. What does the graph really show with respect to the company's growth? Explain your answer.
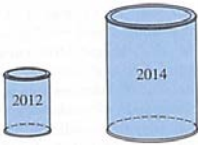
38. Find the area of the kite shown in the figure.
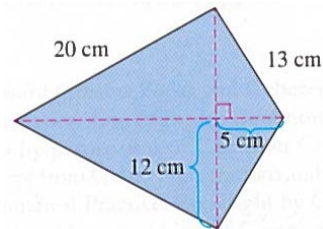
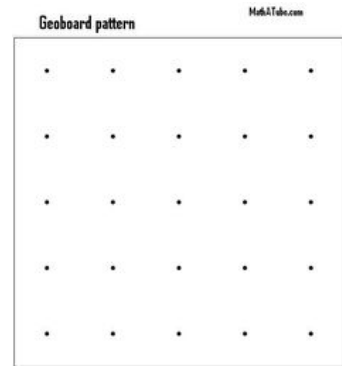39. Find the area of the triangle with side lengths

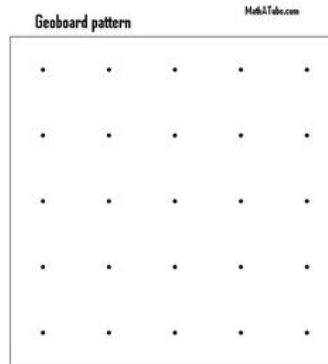(a) 5 m, 5 m, and 7 m.   (b) 3 ft, 4 ft, and 5 ft.

40. What is the length of the diagonal of a 8 ½ × 11 in. piece of paper?
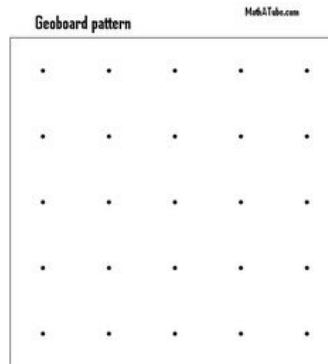
41.   On 5 × 5 geoboard paper,

(a) Draw a polygon whose perimeter is greater than 16 units.

(b) Draw a polygon with the least perimeter.

(c) Draw a polygon with the greatest area.

42.   Complete each of the following with the appropriate number or metric unit.

(a) A VERY, VERY heavy object has mass that is measured in _____ .

(b) A cube whose length, width, and height are each 1 cm has a volume of _____ .

(c) If the cube in part (b) is filled with water, the mass of the cube is _____ , and
      the capacity of the cube is _____ .

(d) If a car uses 1 L of gas to go 12 km, the amount of gas needed to go 300 km is ____ L.

(e) 165 cm = _____ m   (f) 10 km = _____ m

(g) 35 mm = _____ cm   (h) 53,000 m = _____ km

(i) 51.8 L = _____ cm^3 (j) 10 km^2 = _____ m^2

(k) 50 L = _____ mL   (l) 257 mL = _____ L

(m) 52,813 g = _____ kg   (n) 4,800 kg = _____ t

(o) 5 m^2 = _____ mm^2

43. A storage tank that is a right rectangular prism is 1 m × 2 m × 3 m. If the tank is filled with water, what is the mass of the water in kilograms? In metric tons?

44. For each of the following scenarios, fill in the blank with a metric measurement unit to make it reasonable.

(a) Anna filled the gas tank with 80 _____ of gas.

(b) An adult man has a mass of 82 _____ .

(c) The textbook has a mass of 978 _____.

(d) A nickel has a mass of 5 _____ and is worth 5 ¢.

(e) A typical adult cat has a mass of about 4 _____ .

(f) A compact car has a mass of about 1.5 _____.

(g) The amount of coffee in the cup is 180 _____.

45. Decide if the following statement is *likely* or *unlikely*.

(a) Carrie's bath water has a temperature of 15°C. _____

(b) Anna found 26°C too warm, so she lowered her thermostat to 23°C. _____

(c) Jim is drinking water that has a temperature of -5°C. _____

(d) The water in the teakettle has a temperature of 120°C. _____

(e) The outside temperature dropped to 5°C, and ice appeared on the pond.
    _____

Do your best! Live and learn!